TOWN OF WASHTUCNA WASTEWATER FACILITIES

SUMMARY

This fact sheet is a companion document to the State Waste Discharge Permit No. 5361 for the Town of Washtucna, Whitman County. The Department of Ecology (the Department) is proposing to issue this permit.

This fact sheet explains the regulatory and technical basis for the conditions contained in the permit. Public involvement information is contained in the Appendix.

GENERAL INFORMATION

Applicant: Town of Washtucna

Facility Name

and Address: Town of Washtucna POTW

P.O. Box 713

Washtucna, WA 99371

Type of

<u>Treatment</u>: POTW; two earthen-lined lagoons

Lagoon

<u>Location</u>: South border of Town between the Burlington Northern and Union Pacific

Railroad lines, just east of the small intermittent stream that runs through

the center of town. N¹/₂,SW¹/₄,Sec.33, T.15 N., R. 36 E.W.M.

Latitude: 46° 44' 46"N

Longitude: 118° 18' 55"W

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. **ST-5361**The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to waters of the State of Washington. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.162) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. Regulations adopted by the State include procedures for issuing permits (Chapter 173-216 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC) and water quality criteria for ground waters (Chapter 173-200 WAC). They also establish the basis for effluent limitations and other requirements which are to be included in the permit.

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D-Response to Comments

GENERAL INFORMATION			
Applicant	Town of Washtucna		
Facility Name and Address	Washtucna STP; P.O. Box 713; Washtucna, WA 99371		
Type of Treatment System:	Non-overflow lagoons		
Discharge Location	Same as application area		
Legal Description of Application Area	N½,SW¼,Sec.33, T.15 N., R. 36 E.W.M. Latitude: Latitude: 46° 44' 46"N. Longitude: Latitude: 118° 18' 55"W.		
Contact at Facility	Name: Jay Lasen, Water Superintendent Telephone #: (509) 646-3203		
Responsible Official	Name: Syd Sullivan Title: Mayor of the Town of Washtucna Address: P.O. Box 713; Washtucna, WA 99371 Telephone #: (509) 646-3253 FAX # (509) 646-3253		

BACKGROUND INFORMATION

DESCRIPTION OF THE COLLECTION AND TREATMENT SYSTEM

The Town of Washtucna is located in Adams County about one mile north of the Franklin County line. The town lies in the Washtucna Coulee about 88 miles southwest of Spokane and 28 miles south of Ritzville. Highway transportation into Washtucna is provided by three Washington State Highways. State Highway 26 is the main route from Vantage to Colfax and is an improved route through the town. State Highway 260 is the route from Connell to Washtucna and State Highway 261 connects Washtucna with Ritzville. Railway service into town is provided by the Union Pacific Railroad and the Burlington Northern Railroad. A couple of intermittent streams run through the middle of town.

Washtucna is located in the semi-arid region of southeastern Washington. Annual precipitation is approximately 12 inches per year and snowfall ranges from 10-15 inches during a normal winter. Temperatures are generally moderate with low temperatures rarely reaching below 0°F. High temperatures during the summer may reach 100°F for several days.

The current population of Washtucna is about 278, which is a decrease from the population of around 400 when the wastewater facility was originally constructed. This migration trend is common for many small towns in eastern Washington. The population has stabilized over the past few years. The town is primarily a service area for a large region of wheat farms and cattle ranches. Stoess Manufacturing, producing farm machinery, is the only industry in town. Other business enterprises include grain elevators, farm implement and supply dealers, a motel, a bank, several retail stores and two restaurants.

HISTORY

The town's sewerage system and wastewater treatment system were constructed in 1973 with state and federal grant assistance. The facility was constructed as an earthen lined 2 cell non-overflow lagoon. Standards, at the time, allowed a 0.1 inch per day seepage rate from such lagoon systems. Lagoon cell #1 was sized at 1.7 acres and lagoon #2 at 4.0 acres. This system replaced the inadequate on-site individual septic tanks used throughout the town.

In 1974, shortly after construction completion, portions of the bottom of lagoon cell #1 failed. The compacted soil and clay sealer gave way, and the contents drained out. The Ecology inspector observed that the lagoon had been constructed on a highly permeable gravel base, which allowed the contents to quickly drain out once the sealer failed. The town repaired the lagoon with its own funds.

COLLECTION SYSTEM STATUS

The collection system, constructed in 1973, consists of approximately 20,000 lineal feet of 8" gravity sewer, and a pump station adjacent to the lagoons which lifts the sewage to the treatment lagoon via a short section of 4" force main.

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TREATMENT PROCESSES

The treatment system was designed for a population of 500. Currently, only lagoon cell #2, 4.0 acres, is being used, and from visual observation, it adequately retains the sewage without risk of overflow. The original design was based on a percolation rate of 1/4 inch per day. It appears that this value reflects the current rate of percolation from lagoon cell #2. A one time Seepage analysis was required in the previous permit. In the first quarter of 1998, the seepage test determined that 17,344 gallons/day or 0.16 inches of water over an area of approximately 4 acres were seeping from lagoon #2. It may be prudent to determine groundwater information and the impact of this relatively high rate of percolation on the groundwater.

Design criteria contained in the approved operation and maintenance manual from 1971 which best reflects the existing conditions are:

Annual Average Flow: 50,000 gpd
Maximum hourly flow: 125,000 gpd
Influent BOD loading: 100 lbs/day

(0.2 lbs/capita/day x 500)

Design population:

Lagoon #1

Lagoon #2

Evaporation

Rainfall

Percolation

500

1.7 acres

4.0 acres

55 inches/year

10 inches/year

DISTRIBUTION SYSTEM (INFILTRATION BASIN)

Essentially, the second lagoon acts as an infiltration basin, discharging over 17,000 gallons per day over a 4 acre area. The impact of this discharge on the groundwater needs to be better quantified. This permit will require that additional groundwater analysis be done.

RESIDUAL SOLIDS

The treatment facilities remove solids during the treatment of the wastewater at the pump station, in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the equipment. Grit, rags, scum and screenings will be drained and disposed of as solid waste at the local landfill. Solids removed from the lagoons will be treated and land applied under a permit from the Adams County Health District.

GROUND WATER

There has not been groundwater analysis of this site in any of the previous planning documents. Site analysis done at the time of the 1980 report indicate that the soils are a silty loam down to 13 feet. At the time of the original planning effort, a planned seepage rate of 1/10 inch per day was acceptable design for non-overflow earthen lined lagoons. This permit will require that a groundwater analysis be completed for the area around the lagoons.

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PERMIT STATUS

The previous permit for this facility was issued on January 26, 2000.

An application for permit renewal was submitted to the Department on June 28, 2004 and accepted by the Department on June 28, 2004.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on May 21, 2002.

During the history of the previous permit, the Permittee has missed submittal dates for Discharge Monitoring Reports (DMRs) and therefore has been out of compliance with their permit. The town did not secure funding to complete a facility plan for plant upgrade per the compliance schedule in the previous permit. The previous permit contained no effluent limits.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the permit application and in discharge monitoring reports. The proposed wastewater quality in the lagoon being used which could be characteristic of the seepage discharge available to infiltrate to the groundwater is characterized for the following parameters:

Table 1: Wastewater Characterization

<u>Parameter</u>	Concentration
Average Monthly Influent Flow (gpd)	45,500 gpd
Lagoon #2 BOD ₅ (mg/l)	129 mg/l
Lagoon #2 Conductivity (mmhos/cm)	685 mmhos/cm
Lagoon #2 Total Nitrogen (mg/l)	27 mg/l

This information represents a summary of the information submitted by the permittee from the period December, 1997 to July, 1999 in the monthly DMRs. The Department has chosen to use this data because DMRs submitted since that time do not include enough data points to provide reliable averages.

SEPA COMPLIANCE

State Environmental Policy Act (SEPA) compliance will be a part of any upgrade to the system.

PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be either technology- or water quality-based. Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the State. The minimum

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requirements to demonstrate compliance with the AKART standard are derived from the *Water Reclamation and Reuse Standards*, the *Design Criteria for Municipal Wastewater Land Treatment*, and Chapter 173-221 WAC.

The approved engineering report includes specific design criteria for this facility. Water quality-based limitations are based upon compliance with the Ground Water Quality Standards (Chapter 173-200 WAC).

The more stringent of the water quality-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110).

GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. Drinking water is the beneficial use generally requiring the highest quality of ground water. Providing protection to the level of drinking water standards will protect a great variety of existing and future beneficial uses.

Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following:

Table 2: Ground Water Quality Criteria

Total Coliform Bacteria	1 Colony/ 100 mL

Total Dissolved Solids 500 mg/L

Chloride 250 mg/L

Sulfate 250 mg/L

Nitrate 10 mg/L

pH 6.5 to 8.5 standard units

Manganese 0.05 mg/L
Total Iron 0.3 mg/L

Toxics No toxics in toxic amounts

The Department has reviewed existing records and is unable to determine if background ground water quality is either higher or lower than the criteria given in Chapter 173-200 WAC; therefore, the Department will use the criteria expressed in the regulation in the proposed permit.

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The discharges authorized by this proposed permit are not expected to interfere with beneficial uses.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and that effluent limitations are being achieved (WAC 173-216-110).

INFLUENT AND EFFLUENT MONITORING

The monitoring and testing schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-216-110).

FACILITY LOADING

The design criteria for this treatment facility are taken from the operations and maintenance manual prepared by Saxton and Kennedy in 1973 and are as follows:

Monthly average flow (max. month): 50,000 gpd
Peak flow rate 125,000 gpd

Design Population 500

Percolation Rate 1/4 inches/day
BOD influent loading: 100 lbs/day
TSS influent loading: 100 lbs/day

The permit requires the Permittee to maintain adequate capacity to treat the flows and waste loading to the treatment plant (WAC 173-216-110[4]). The Permittee is required to submit an engineering report when the plant reaches 85% of its flow or loading capacity. The flow rate exceeds the approved design parameters. Additionally, only one of the two lagoons is operational.

OPERATIONS AND MAINTENANCE

The proposed permit contains condition S.5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

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RESIDUAL SOLIDS HANDLING

To prevent water pollution the Permittee is required in permit condition S7. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503. The disposal of other solid waste is under the jurisdiction of the local health district.

Requirements for monitoring sewage sludge and recordkeeping are included in this permit. This information will by used by Ecology to develop or update local limits and is also required under 40 CFR 503.

PRETREATMENT

WAC 173-216-110 requires that the list of prohibitions in WAC 173-216-060 be included in the permit.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to ground water permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to submit written notice of significant increases in the amount or nature of discharges (typically new industrial discharges) into the sewer system tributary to the permitted facility. Condition G6 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G7 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Condition G8 requires application for permit renewal 60 days prior to the expiration of the permit. Condition G9 requires the payment of permit fees. Condition G10 describes the penalties for violating permit conditions.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington. The Department proposes that the permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Washington State Department of Ecology, 1993. <u>Guidelines for Preparation of Engineering</u> <u>Reports for Industrial Wastewater Land Application Systems</u>, Ecology Publication # 93-36. 20 pp.

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Washington State Department of Ecology and Department of Health, 1997. <u>Water Reclamation and Reuse Standards</u>, Ecology Publication # 97-23. 73 pp.

Washington State Department of Ecology, 1996. <u>Implementation Guidance for the Ground Water Quality Standards</u>, Ecology Publication # 96-02.

Washington State University, November, 1981. <u>Laboratory Procedures - Soil Testing Laboratory</u>. 38 pp.

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APPENDICES

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on June 19 and June 26, 2003 in the Othello Outlook to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

This permit was written by Wayne Peterson.

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APPENDIX B--GLOSSARY

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of the collection or treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

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Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria--A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids--That portion of total solids in water or wastewater that passes through a specific filter.

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Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.

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APPENDIX C—SITE MAP

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APPENDIX D--RESPONSE TO COMMENTS